Q U A N T A

T H E   N E W S L E T T E R   O F

T H E   I N D E P E N D E N T   Q L   U S E R S '   G R O U P

VOLUME 2 ISSUE 1

FEBRUARY 1985

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INFORMATION ON THE GROUP

Membership of IQLUG is by subscription to Quanta, the Group's newsletter, which is published Monthly. Membership details are obtainable from the secretary. Membership of the group is open to anyone with an interest in the Sinclair QL Microcomputer.

Members requiring assistance with problems related to the QL may write to or phone the secretary. An attempt will be made to put them in touch with a member who can help with the problem.

Workshops will be arranged from time to time in various parts of the country.

The Group maintains a software library. Most of the programs are free to members. A library list will be published from time to time. Programs are obtainable from the sub-librarians.

A list of members in any particular area is obtainable from the secretary. Please send all contributions to the newsletter to the editor.

Chairman and Newsletter Editor	Secretary and Newsletter Publisher
Leon Heller, 8 Morris Walk, Newport Pagnell, Bucks. MK16 3QD. Tel: (0908) 613004	Brian Pain, 24 Oxford Street, Stony Stratford, Milton Keynes MK11 1JU. Tel: (0908) 564271

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Quill, Abacus, Archive arid Easel are trade marks of Psion Ltd.

NOTES FOR CONTRIBUTORS TO QUANTA

Contributions should be printed on A4 paper, using a fresh ribbon. Do not fold the sheets, but keep them flat when posting.

Quill files on Microdrive cartridges (cartridges will be returned) are acceptable, as are handwritten articles.

Short programs can be included, but lengthy programs should be placed in the library, and a description sent in for the newsletter.

EDITORIAL

It looks as though Sinclair have decided to "relaunch" the QL,judging by the vast amount of advertising they are placing in the magazines. Sales have been rather disappointing, at around 45,000, and several retailers are discounting the machine quite heavily. I feel that it is now a very attractive machine, for the money and, compared to the Beeb a year after that was launched, has a great deal more going for it. The QL now has disks, 256K or 512K RAM expansion modules, several assemblers, Pascal, BCPL, Forth, APL and LISP, with lots of applications software coming along. The Beeb had nothing like that lot after a year, as I recall. The Beeb was also about six months late, as was the Electron! Moreover, Acorn appear to be having severe financial problems, which can only help sales of the QL.

Microdrive cartridges have come down in price at last, and Sinclair are providing free duplicating facilities to software houses producing QL software, which should result in a lot more software becoming available.

When I visited Camberley (report in this issue), I had a meeting with Sinclair staff over the Psion upgrades. I had to admit that the number of members complaining about the Version 1 programs being unsuitable for serious business use was negligible, so I agreed to drop my general recommendation to members to return their systems under the Sale of Goods Act, when the Version 2 programs materialise. This does not preclude any individual member pursuing such a claim, of course, and we will assist individual members if they wish to make such a claim.

On a lighter note, I see that British Telecom are calling their version of the ICL One-per-Desk the "Tonto". This is a rather unfortunate choice of name, as it means 'silly' in Spanish! This isn't quite as bad as Commodore's choice of PET for their first machine, which is a slightly rude word in French, or VIC for their second machine, which is a very rude word in German!

In this issue, a member asks if we could recommend all members to write to a person in Sinclair, such as Sir Clive. There is such a person in the Sinclair organisation, but I cannot publish her name, as she would then be swamped with letters and phone calls which should go, in the first instance, to Camberley. If you contact Camberley, but still feel hard done by, give me a ring and I will tell you who to contact.

You should by now have received a programme and booking form for the Swindon workshop on 1/2/3 March. We are trying to get more members to give talks at future workshops. The hotel gives one night's free accommodation to speakers, so if any of you feel you can contribute something, give me or Brian a ring.

Leon Heller

MEMBERS' LETTERS

Some food for thought on two articles in QUANTA issue 12. Firstly, the Simplex Data RAM expansions; the first 256K unit I received crashed my QL after 30 seconds as did its replacement. Ah, I thought, a batch of faulty components. But no, it worked perfectly on a friend's QL so I contacted Simplex who asked for details of the model number of my machine which is D05 upgraded to D12. On returning this second unit and having it upgraded to 512K at the same time) I received a perfectly working board. As yet I haven't contacted Sinclair or Simplex but the outcome of all this is potentially nightmarish :-

1. There are differences in the expansion ports of different QL's even though they are all supposedly upgraded to the same standard.

2. If there are hardware manufacturers out there unaware of this then they will have to accept large returns of their products.

3. There will have to be different versions of each new peripheral which means increased costs and will possibly deter people from entering the QL add-on market.

I hope that there is a simple answer for all this; perhaps you could ask Sinclair when you visit them? As for the RAM board itself the design is brilliantly compact and how they can sell them so cheaply when the chips are advertised individually for £55, I will never know. Furthermore, Quest with their relatively expensive, antiquated designs which require a separate housing and £50 power supply will surely never find a niche in the market. I can see that the board could be prone to overheating when placed in the QL instead of in an expansion module but mine has yet to do so.

Speaking of expansion brings me to the next subject. Now that you can buy RAM packs, disk interfaces and Centronics interfaces which all use the 64-way port, when will the Sinclair Expansion unit be available? Perhaps you could ask them that as well. I understand that the unit will he more than just plugs, cable and a box as a bug in QDOS won't allow the QL to recognize more than one peripheral at once - will there be several versions of expansion unit also to suit different releases of QDOS? Hopefully this restriction shouldn't apply to memory expansion which occupies a fixed address space - it isn't 'chained* as other units are. Anyhow, when my CST disk interface arrives I plan to try out a straight one into two 64-way connector - I'll keep you posted on the results.

Another bug in Abacus;- when using 640K memory Abacus tells you you only have around 58K to play with! Presumably you have a lot more than this but Abacus's memory count trips to zero after a certain value and starts counting again.

I was interested to read John Tanner's remarks concerning my 'files_bas' program on the library tape. The routine is intentionally curtailed to the bare minimum to maximise memory/Microdrive storage - it wasn't meant as a lesson in SuperBASIC but a self contained set of interactive procedures. There is no entry point as it is a lot easier to type 'files' than 'GOTO 30013' or whatever. When I submitted this program I included an A4 page of instructions which presumably hasn't been copied to John. Basically, it works only in monitor mode with maximum sized windows. Initiate cartridges by typing 'create_dir n,m' where ' n' and 'm' are l or 0 depending on whether you wish to do the cartridge in Drive 1 or 2 (respectively). Start the procedures by typing 'files'. I will shortly be submitting a slightly revised version to the library along with a multitasking Memory status routine which should appear in the computer press shortly (It's called .'Systat' to

save you typing it in). In the meantime I would be more than happy to supply John Tanner with a copy of the instruct ions and the latest version if he sends a cartridge.

John Lawlor,
35 Stonefield Drive,
Inverurie,
Aberdeenshire,
Scotland.

I am writing in reply to Richard Snowdon's notes about QL bugs in the January issue of Quanta.

The MT.DMODE trap does work when reading the monitor/ TV mode, except that the SuperBASIC MODE procedure corrupts the system variable SV.TVMOD. It changes its value to 0, 1 or 3 as Richard points out, because D2 is not set by the procedure when it calls MTDMODE. Interested readers can examine the mistake in the ROM at $6E94 (AH)/$6EE0 (JM).

He is lucky in managing to get MT.RERES to work even intermittently - I use a JM ROM, and can never get it to release RESPR - it always increases it when I use it! I have not tracked this one down yet.

The problem he describes with a large string array is caused by the bug in the CALL command, which causes the machine to crash with large amounts of BASIC data present. The fix for this was detailed in Popular Computing Weekly 29th November, and hackers can examine the word-sized addressing in the routine starting at $5FDC (AH)/ $6024 (JM) that should be long-sized.

For WDR Spene in the same issue enquiring about the amount of RAM connected, and others, PEEK_L(163872)-131072 gives the amount of RAM physically present.

Keep up the good work, though I think the hundreds of different ways of connecting Brother printers to the QL are getting a little repetitive. If you got a Macintosh I don't think you'de get any more complaints about the layout of the mag, even without going the whole hog and buying a LaserWriter to go with it!

Andrew Pennell,
41 Mornington Road,
Woodford Green,
Essex.
IG8 0TN.

Thank-you very much for the back issues of QUANTA. I have read them and found them both interesting and very useful. Of course, the more recent ones are more relevant. The last issue you sent was for December 1984. Perhaps the January issue is already on its way. In case not, I thought I would write to you with some bits and pieces for you to publish (if you wish).

INPUT has a serious restriction. It has an internal buffer that is only 128 bytes long. This means that INPUTting a string longer than that gives "buffer full" error message. I can see no way to get round this. Do any of our members? The reason I wanted long strings was actually from a Microdrive file that I was processing. It was a Basic program and had (naturally) some rather long lines in it.

Have our members noticed that pressing CTRL/F5 stops all output to the screen (temporarily) and pressing any key, including CTRL/F5, restarts it. This is particularly useful when listing a file or directory. It even works in QUILL, but I cannot see any need for it there, although in Computer One's Pascal I use it all the time. This 'Halt' facility even makes graphics output pause!

You asked for a list of BEEP values to produce a musical scale (back page, Vol 1 issue 11). Try these:

77	Low C	33	Middle C
72		30	
67	D	28	D
63		26	
59	E	24	E
55	F	22	F
51		20	
47	G	18	G
44		17	
41	A	15	A
38		14	
35	B	12	B
33	Middle C	11	High C

The numbers without a note name by them are the semitones ("black notes"). Of course, it is possible to get lower notes, but higher ones are invariably out of tune. Even some of these distress my musician friends!

I have often found it awkward that the DATE function only works to the nearest second. There is in fact a word that is incremented 50 times a second - it is in location 163886. Thus POKE_W 163886,0 (QDQS does not mind!) can be used to reset it to zero before use, (equivalent to the BBC's "TIME=0") and then it can be read at any later time by PEEK_W(163886). Because it is only a word, not a long-word, it has a maximum value of 32767. After that it goes negative. However, 32767*(1/50) seconds is over ten minutes which is adequate for many applications.

I am using a QL with SuperBASIC version JM and QDOS version 1.03. Other versions, of course, may not perform in quite the same way as I have described.

I am writing from my home address, but I have registered as a member of IQLUG using my University address which is:
        University of Strathclyde,
        Computer Science Department,
        26 Richmond Street,
        Glasgow G1 1XH.

I am telling you this in case, when you look up your records it appears that I am not a member - I have not yet received a membership card.

Richard Kingslake,
48 Heather Avenue,
Bearsden,
Glasgow. G61 3JG.

I have an idea about how to add a real time clock to the QL that won't lose the time when the QL is switched off and still is fully compatible with the software that uses SDATE, DATE$ and so on. To achieve this you have to make an I/O board with an EPROM and a special real time clock-IC that is meant to be connected to a computer bus. It will also have to have a battery backup circuit on board. Through software you will then be able to set and read the IC's time. On reset every QL-I/O board is given the opportunity to execute an initialisation routine, the one on this board will have to move the correct time from the IC to the QL clock. In this way the QL-clock will be initiated to the right time and date every time you switch the QL on and it will take over the task of typing SDATE with those many parameters. Of course the IC will have to be initiated itself one time, but this can be done by a simple Basic program or an assembly-program in the onboard EPROM that can be CALLed. Maybe CST could make this. I think it will have to cost no more than 30 pounds, although I doubt whether CST will agree.

As I already expressed I am very impressed with the software library. Seven cartridges by the end of January is very much, I couldn't help thinking the QL is a new kind of CP/M-80 computer. I hope the library 2 cartridge contains a disassembler as of the two I have got,one is very slow (4 sec. per instruction) and the other contains a few bugs. I am looking forward to the copy program because copying file by file takes very long and could overheat the QL and give "bad media". Also the assembler is interesting as one of my reasons to buy the QL was learning 68000-assembler. This may give me an advantage when applying for a job in hardware/software developing. When I am using it extensively I may buy a "real" 40 pound assembler.

I have bought a Zenith ZVM-123 green monitor. It gives a very good picture. At first I used the pins 1 and 2 as told in the manual but this gives a crawling in the "colour" of the, steady, characters much like I experienced when I used a TV. Using pin 3 instead of 1 gave the picture I wanted. Also I could get the 512x256 picture completely within the tube-surface, I could even have gone much further. Does someone know if it is possible to have the white case replaced by a QL-black one?

I would like to complain a bit about the articles in Quanta 11 that were printed with a minimum linefeed. The text was just readable but the listing on page 11/12 was very hard to be read. I hope this doesn't become a habit.

Finally I would like to ask if someone could supply me with information where to get a hardware scheme of the QL or a documented disassembly of the QL-JM ROM. Also I would like to know if I can become a member of QLUB as I am a foreigner. Back in March I asked Sinclair for the QL-folder by means of the coupon in the two-page QL-advertisement and was told by Sinclair I should ask the Dutch Sinclair importer for it. They don't even yet sell QL's (January 14th) so I could forget that, but now I am thinking seriously about QLUB because of the discounts, new Psion-programs, and product information.

I hope someone can answer my questions and use my ideas. All the best to IQLUG.

A.W. den Hartog,
Tienvoet 2,
3261 TP Oud Beyerland,
The Netherlands.

I enclose copies of recent correspondence between myself and a Mr. J. N. Rowland of W.H. Smith & Son Ltd., on the subject of problems I had when I purchased a QL from their Glasgow branch.

As you can see, Mr. Rowland has admitted that they knowingly sold pirated "Psion" software to a number of QL customers in order to overcome an apparent quality problem.

Since this representative from Smiths seems to be totally unconcerned by this malpractice I have written to you. Perhaps you might care to publish a warning in a future issue of QUANTA.

You may be interested to know that including the episode with Smiths I have owned a total of seven QL's. I got fed up after the first four and obtained a full refund from Sinclair in terms of the Sale Of Goods Acts. Number seven was purchased from John Menzies.

Ian Cowan,
Flat 3,
Lag - Na - Craig,
4 Cross Road,
Paisley,
Scotland.

/* Ian's seven QLs is a record! Can anyone beat it? */

May I say that I thought the Swindon workshop was very good value. I was only sorry I wasn't able to stay for all of it. Sadly I only found out about it at very short notice and had made other plans.

Judging from the letters to QUANTA it would appear I have been luckier than some. I haven't, touch wood, experienced any of the hardware problems described. I do however have 2 problems which impose a major limitation on the usefulness of the system. I would be interested in any comments.

The first is keyboard lock-up. It seems to happen for no apparent reason both when in SuperBASIC or when using the Psion software - and invariably for no apparent reason. The result is that there is hardly a single document or program that I haven't had to type at least twice, which rather negates the point of having a word processor. I know I should make back-up copies but sometimes it happens twice during the course of one page. I suspect this may be due to spikes in the mains. I have bought a 750 W mains interference suppressor but it hasn't really cured the problem. Could I have a hardware problem?

The second is my ever increasing pile of part filled Microdrive cartridges which will no longer load. Most of the files have loaded satisfactorily at least once, some 2 or 3 times. I know the contents are still in there but I can't access them. Is there not someway of putting a new header on them or whatever? I believe this

can be done for discs. I have just read Mr Medhurst's article in Issue 11 with interest. However I suspect this is for the immediate recovery of a crashed document. It doesn't work with my old documents. I have inspected them by copying them to the screen in SuperBASIC and they all appear to be missing their headers and in some cases the first few lines.

Do you know if anyone has produced a printer driver for the Silver-Reed EXP 500 daisy wheel printer?

One limitation I have found with QUILL is the inability to have 2 columns on a page, using the margin facility; like for instance the minutes of a meeting with an 'action* column down the right hand side. Or have I missed something?

And finally do you know if a trace routine is on the market which allows one to follow a running program step by step? If so it would certainly speed up debugging.

R C Armstrong,
2 Berens Road,
Shrivenham,
SWINDON.
Wilts, SN6 8EG

I am afraid that this is another tale of woe about the QL but I think it proper that you should be kept informed. However I shall keep it as brief as possible.

1. Ordered on 1 March.
2. Reordered late April as Sinclair had no trace of my original order.
3. Delivered late August.
4. Access account overcharged by £14.95. Do all members check their charges?)
5. Returned to Frimley (An offshoot of Bracknell called GSI Sinclair) as faulty by hand on 29 October.
6. Received it back on 14 November, still faulty, returned the same day.
7. Received it back on 28 November, still faulty, returned the 29 November.
8. Received it back on 13 December, still faulty, returned on 17 December and received a complete replacement kit. I had been without my QL for over six weeks.
9. I am now on the point of returning the latest machine for fault correction (3 January).

I am writing to you in the hope that you, through IQLUG, with enough evidence will be able to influence Sinclair to improve their ways. My own experience indicates that they are not helpful (Not one promise of being rung back has materialised.), that they assume that all faults are bugs which a new programme cartridge will put right, and that they appear to be very disorganised.

I attach copies of two letters which I have written to Sinclair which give more detail on faults.

I am using Quill to write this so that must mean some sort of confidence is creeping in !

A last thought. Could you not recommend all members to write their letter to a person, such as Sir C himself?

Peter Dyer,
Kineff House,
Devon Bank,
Guildford,
Surrey. GU2 5DQ.

A Happy New Year to all IQLUG members and Hello from me, I'm new to the Club, my name is Brian McNulty.

I have been plagued by disaster since February 1984 from the day I ordered my QL.

The manual I received with the machine in July, yes folks, 5 months waiting and the torture of all those adverse reviews in all the computer mags, the manual beginners guide 60% errors and no attention to letters at all, in fact Sinclair rarely answered them, they also cost me close on £20 in phone calls over the Manual and lost cartridges and refused to reimburse me for same, not even a free Microdrive Cartridge or two.

However, the reason I am writing is that Sinclair continue to get it wrong it seems. In Issue 3 QLUB NEWS Jan 85, received today, QL TOOL KIT 20% discount to members £14.95 on page 3, then on page 16 QL TOOL KIT 20% discount £19.95 to members, so I rang up and the girl said that she supposed it would be the cheaper one so I insisted she found out, then when I said I would order one, guess what? Uncle Clive at his usual tricks, "Sorry, not ready yet but will be in the near future, soon". "How soon?". "Probably a few weeks or so but we will get in touch and let you know when it is". I told her to forget it for now as when I get it, it will probably be faulty.

Any adverse criticism Sinclair gets cannot be as harsh as it deserves for the way it treats its customers, it doesn't deserve any customers even though the QL is a potentially good machine.

It appears the laws of the land are not enforced, only on the lowly.

It's over a month and 3 phone calls and no sign of my QL Chess yet, 10-14 days despatch I was told on the telephone twice. It was also promised before Christmas.

However you lucky people who didn't part with £35 for QLUB can't be frustrated by them.

Please does anyone have a Machine Code Loader to enable me to type in the Machine Code Listing Clock in Issue 2 of QLUB News?

I must say, apart from the eye strain from small print, what a helpful and useful magazine QUANTA is and so far my dealings with the librarian at local level, by mail and telephone have been superb, it could set Sinclair an example, everyone is helpful, polite, courteous and nothing's too much trouble. Thank you IQLUG, being a beginner I need a lifeline and Sinclair's is made of concrete - it sinks before it gets to you, that's when they bother to throw it.

Keep up the good work and I hope that in the not too distant future I may be able to help some others in one way or another, I shall certainly work to that end.

Mr A B McNulty,
14 Millfield Road,
Bridlington,
East Yorkshire. Y016 5AS

As a "computer illiterate" I find the QUANTA newsletter very interesting and helpful, even though sometimes I can understand only 30% of it .The December issue with the report on the Prism monitor was good , and I have since bought one. The performance is excellent. Can anyone tell me how to modify the Prism monitor to work with the Spectrum? Having read the Prism review I went on to read your notes on the QLMON monitor/debugger. What is this utility? A description of its uses would be most helpful to us beginners.

The QL was bought as a low cost introduction to Business computing , and it is only with the help of the excellent Blueprint books on Abacus and Easel, by Century Communications that I have got the system up and running. The Archive edition to the series is eagerly awaited.

The following is a list of subjects, that may be of interest to beginners and the average Psion package user, for inclusion in future newsletters.

1/ Printers ....How they operate ,and how to program them to print all types of characters.

2/ The Spectrum… Can this be of further use and integrated into the QL system? I have heard that it can be used as a printer driver.

4/ Modems… Uses and operation ,including telex applications.

5/ Disc Drives... Their applications and uses.

My QL,D11- JM version,was supplied by Northampton Home Computer Centre. Their aftersales service and help is excellent. My first QL (also a D11- JM) over heated and caused most programs to crash after about half an hour's use. The QL was replaced at once as have several Microdrive Cartridges that have become faulty, noisy or just impossible to format. The present QL runs for up to 4 hours, and all programs operate correctly ,although Quill is far too slow.

Keep up the good work with the newsletter and the battle with Sinclair. They have a good product which is being spoilt by poor marketing and customer relations.

Brian Hooker,
The Cottage,
Creaton Road,
Hollowell,
Northampton, NN6 8RP.

ARCHIVE STRING PROCESSING

Ever since receiving my QL (serial no. D06-) last July, I have been using it regularly and heavily, mainly for manipulating Archive databases.

String processing in Archive for output formatting is not easy if you have not anticipated the problems. I enclose an Archive program for cutting up strings containing ";" and "," as separators (within a field in an Archive record). The program is deadly slow, to say the least, but does illustrate the use of the INSTR(a$,b$) function.

Proc_newprt cuts s$ by finding the";" markers.
Proc_strprt prints the substrings if they do not contain a comma, or sends the substring to
Proc_comchk which splits the string at the comma and prints it.

One thing that has puzzled me from day one with the QL is: what can you do with the ALT key (bottom left on the keyboard)? I have yet to see a program/application in which this very handily-placed key is used. I cannot get it to do. anything from SuperBASIC, and would appreciate enlightenment (as, no doubt would other QL owners).

H.S.Bite,
4, Edington Gardens,
CLARA VALE, Ryton,
Tyne and Wear NE40 3SS.

```
proc newprt
   let a$="Portcullis-Ellis, Winston; Smith, John; Pacemaker, Anthony
   if instr(a$,";")=0: strprt;a$: endif
   while instr(a$,";")<>0
      let m=instr(a$,";"): let p=1: let p$=""
      while p<>m: let p$=p$+a$(p): let p=p+1: endwhile
      strprt; p$:
      let p=p+2: let p$=""
      while p(len(a$)+1: let p$=p$+a$(a): let p=p+1: endwhile
      let a$=p$
   endwhile
   if len(p$)<>0: strprt; p$: endif
   let p$=""
endproc
proc strprt; p$
   if instr(p$,",")=0: lprint p$: else: comchk;p$: endif
endproc '         .. .. -
proc comchk;p$
   let c=instr(p$,","): let d=1: letd$=""
   while d<>c+1: let d$=d$+p$(d): let d=d+1: endwhile
   lprint d$
   let d=d+1: let d$=""
   while d(len(p$)+1: let d$=d$+p$(d): let d=d+1: endwhile
   lprint "  "; d$: let d$=""
endproc

Portcullis-Ellis,
    Winston
Smith,
    John
Pacemaker,
    Anthony
```

PROBLEM SECTION

I was very interested to read on page 33 of the December issue of 'Quanta' the necessary alteration to the dip switch 2 settings on the Epson RX 80 printer to overcome the auto line feed and cartage return when using QL's Basic for list and print. Not that I have a RX 80, but I do have a similar problem with my Sanple Daisy Step 2000. It operates fine with the three 'Psion' programs (i.e. not Easel.), but when it comes to QL Basic, instead of getting carriage return and auto line feed, I just get the auto line feed without the carriage return.

I look forward to receiving comments and suggestions from other members using this daisy wheel printer with the QL with a view to solving my problem.

The complete combination I am using is the QL with a Philips V7001 green screen monitor, the Sanple Daisy Step 2000 with a Miracle Systems Ltd's serial/centronics interface.

RF Patel JP, FCIBS,
Garthowen House,
Hockering Gardens,
Woking,
Surrey. GU22 7DA.
Tel: 04862 72193.

The immediate reason is that I am having trouble installing my printer correctly. It is a Taxan-Kaga KP-810, alleged to be for installation purposes the same as an Exon FX-80. The trouble is that no matter what combination I try, I get "FRAMING ERROR" at the start in place of the first line (which is nearly always a centred or left sided heading). There is no trouble with missing an ordinary line at the start of a new page. The machine defaults to 66, I think, (in case it was one of the odd models defaulting to 72 I tried that with no better result.

To check that I have not made some puerile error (more than likely), the following is my present set-up:

QUILL PROGRAMME (version 1.01.):
Characters per line 70 (I have tried 80 and 75 - I usually work with margins at 5 and 75). Lines per page 66.

DESIGN
Upper margin 3
Page size (63-6=57 lines and 3 for default page number at bottom)
Bottom margin 3
Display 80.

I shall be grateful if someone can unravel this for me.

JVM Stone,
15 Rosamund Road,
Oxford OX2 8NU.

Ferguson TX TV/Monitor MC01

My high-res green screen went down in early December and I dropped a hint that the recently advertised Ferguson TV/Monitor seemed like a good idea for an Xmas gift. Since my hobby has very limited support from my better half I was not optimistic. However, a large box appeared by my bed early on Xmas Eve (our wedding anniversary) and there was the 14" MC01 which has separate Din plug sockets for RGB and Composite Video. It has eight tunable TV channels in addition.

The RGB socket is for a 7 pin Din plug and a sticker on the back of the set gives the pin-outs:- 1 Earth, 2 Sync1, 3 Green, 4 Sync2, 5 Blue, 6 Sound, 7 Red.

I looked up Noel Williams contribution to Quanta in Vol 1 Issue 7 and made up a cable with the required 8 pin Din plug for the QL end connected as he gave with the QL Composite Sync to TX Sync1 and QL Vertical Sync to TX Sync2. The Sound connection was made at the TX plug but not connected at the QL end. It did not work. Since Noel's monitor did not use the QL pin 5 Vertical Sync I removed this connection at the QL end and now it works fine.

The definition is certainly not equal to the dedicated monitors designed for the QL and it does lose three or four characters from the left edge of the screen in Monitor mode but the picture is totally stable and the colour excellent. In 85 column mode the characters are fully readable but have less than total separation due to the low resolution. It has one small problem, which I expect has a fix, and that is a slight beat from the speaker with the volume turned fully down which gets loud if the volume is turned up except when the screen is cleared and has a dark Paper set. The case is compact and a dark charcoal colour which merges well with Sinclair Black. It cost, I believe, £230 which is not much less than a good monitor but if you need an extra TV anyway then the extra cost for a very useable alternative is about £50 which you may find easier to justify.

John Tanner, 43 Northumbria Drive, Bristol. BS9 4HL. Tel: (0272)623401

SYSTEM VARIABLES

In the section marked "QDOS" in the concepts part of the QL manual you'll find a memory map of the QL, and the main system variables which define where in RAM various items are stored. The addresses of these variables (in the 'JM' version, at least) are those shown below:

SV_HEAP	163844
SV_FREE	163852
SV_BASIC	163856
SV_TRNSP	163860
SV_RESPR	163868
SV_RAMT	163872

These variables take up four bytes each, that is, to obtain their value, you have to PEEK_L; i.e.

PRINT PEEK_L (163856) will give you the start address of the BASIC storage area in RAM. Taking the difference between values of variables will give you the amount of space taken up by different systems within RAM. For example

1)   PEEK_L (163860) - PEEK_L (163856) gives you the amount of space taken up by the BASIC program area (excluding procedures and functions, which are stored in the procedures area).

2)   PEEK_L (163856) - PEEK_L (163852) provides the amount of unallocated RAM.

By playing around with these systems variables, you can start to find out how a lot of space is wasted in RAM, and some bugs that exist in QL's -final ROM, the 'JM' version. Try the following program:

```
 5   t=3
10   REPeat loop
20      x=PEEK_L(163856)
30      OPEN £t,ser1
40      PRINT x
50      CLOSE £t
60      t=t+l
65      IF INKEYS(0) = "  " THEN EXIT loop
70   END REP loop
```

RUN the program immediately after loading or typing into your QL. x is given the value of the SV_BASIC system variable, the start of BASIC, and is printed on the screen on each circuit of the loop. I found that after every 12 circuits of the REPEAT loop the value of x dropped by 512 bytes; that is, for some unknown reason, more space was being allocated to BASIC. Eventually, I got an out of memory error message - for a 9 line BASIC program! Not only that, but the computer failed to respond to any direct command (even NEW), and I had to press RESET (awfully useful that button!) to regain control

Even stranger was the fact that if I stopped the program by pressing space, then re-RUN the program, the variable x changed only occasionally in value.

The program I gave here is not just a curiosity; a friend recently used his QL at a swimming meeting to provide an instant results service. To everyone's annoyance, the program crashed out with an 'out of memory' message, and the results service became far from instant. We found the fault to be when opening a channel to SER1 (the printer). Every so often, OPEN (or use of the channel) caused SV_BASIC to drop, so eventually he ran out of memory.

Another bug I discovered recently occurred (in the 'JM' version) when I tried to use a defined function in conjunction with SELECT; the program underwent a machine crash when I tried the following lines

SELECT ON {defined function}

but this worked when modified to:

Z=[defined function]
SELECT ON z

David Nowotnik,
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Aston Clinton,
Aylesbury, Bucks.

Brother M-1009 DIP switch settings, halting DIR scrolling
and other topics

There are two DIP switch settings in the BROTHER rl-1089 instruction manual, 1-2: X ON/OFF,and 2-8: SLCT IN, whose functions are not explained. After some trial and error experiments, I found that they did not seem to have any effect, but to put my mind at rest, I phoned a member of BROTHER'S Technical Bept at Manchester about this matter. He informed me that these two settings are for the selection and switching on and off of remote printers and do not apply in the case of the QL, so that the position of these switches does not matter.

There is also a modification to the function of one of the DIP switches in the very latest K series model. The 1.1 switch function has been changed from Busy Hi/Low to Parity Check. For the QL, this switch is set to ON,(NO PARITY) and 1.7 to OFF, (8 BITS). The setting of 1-6, (PARITY) is unimportant as there is no parity check using the QL. The Busy line is now unswitched and set to Busy/ Hi, which presumably now is standard for most machines. With this information, the connection of the printer should be simple, as the functions of the remaining switches are obvious, and the Sinclair cable plugs straight in without any mod i f i cat i on.

The method I have found for stopping DIR scrolling is so simple that I have hesitated to write in about it, but after reading about Club members using Quill and other commercial software for this purpose, I changed my mind. In fact it can be done in exactly the same way as with a programme listing on the screen, i.e. using CTRL and F5. As the DIR listing is very rapid, hold down CTRL immediately after the Microdrive has started rotating and press F5 to halt listing. Keeping CTRL pressed, the scrolling can be toggled on and off by successive presses of F5. The Microdrive will often stop as listing is halted and restart when F5 is pressed again. I have used this method many times with Library Cartridge 1 which has a lonq DIR and it has never failed.

My third topic concerns the making of copies using the Microdrives. Initially I had a defective master copy of Quill and two working copies, but unfortunately one of the working copies also became defective. I then attempted to make a duplicate of this existing copy , but copying from mdvl to mdv2 it always gave the famous error message, Bad or changed medium at line ... I then copied from mdv2 to mdvl and obtained complete copying. However it absolutely refused to load and so I decided there must be something wrong with one part of the remaining copy even though it seemed to operate perfectly. I had previously noticed that the copying from mdvl to mdv2 always stopped at QUILL and also that the position of CLONE had changed from one end to the other of the DIR. I then copied the files individually using the SINCLAIR master for CLONE ar.d QUILL and the copy for the rest. This produced a perfect working copy which I am using to produce this letter.

I would be very grateful to hear from any member who has had a similar problem, and also if he can explain to me how it is possible to have a working cartridge that will not copy.
A.H.Coppard
128 Forest Drive,
Chelmsford. CM1 2TT.   TELE: 0245 84270

QUANTA Volume 1 Issue 11, p. 18 - erratum:

EASEL graph printing to Brother HP-5 printer

Add to EASEL boot program:

                    60 CLOSE #3

As consolation for those I have misled, I offer:

            QUILL Install_bas

Subscript on	Esc,W, SOH	27, 87, 1
Subscript off	Esc,W, NUL	27, 87, 0
Superscript on	Esc,M	27, 77
Superscript off	DC2	18

Entering the figures on the right will generate the Control Codes in the middle and have these results:

F4L gives low type on screen, and the HR-5 prints **D O U B L E   W I D T H .**

F4H gives high type on screen, and the HR-5 prints **ELITE PITCH**.

Translate 1	£,#
Translate 2	NONE

should be the last two lines of QUILL Install_bas, and are best achieved by editing the FX-80 listing.

DR. BASIL LEE
31, FAIRDALE GARDENS,
LONDON SWI5 6JW
01-789 1976

EASEL graph printing to STAR I0X printer

Some members may be interested to known that the STAR 10X printer can be used to print EASEL graphs, providing the "gprint_prt" part of the EASEL program is modified the same as that required by the BROTHER HR-5.

The "gprint_prt" modification, originally supplied by E.J. SARGENT of Nottingham, was printed on page 25 in the November issue of QUANTA.

Press reset then enter FI or F2 as required, place EASEL, cartridge in mdv I and type in the following lines.

```
Let  a = respr (3000)
LBYTES mdv1_gprint_prt,a
poke_w a+94, 3000
delete mdv1_gprint_prt
SBYTES mdv1_gprint_prt, a, 2000
```

When mdv1 stops, reset, and then load EASEL as normal.

JIM TURNER.
7, BROOKFIELD CLOSE,
SHERFIELD PARK,
CHINEHAM,
BASINGSTOKE,
HANTS. RG24 ORS
TEL. 0256 474395

Calendar BUG

Sorry to find a bug remains in the listing printed in QUANTA Vol 1. issue 12. p23. The required fix is underlined in the two lines requiring correction as below.

380 c=cc :sc = 5 :BAUD 9600 :OPEN#5 , ser1 :PRINT__MONTH :CLOSE#5 :sc = 2
440 cc=c :LINES :IF c: PRINT#sc,TO(c*5),;

Bill Cowhig of Cheshire brought the need for the fix to my notice but he also had another problem in getting his printer to perform a carriage return so he duplicated the PRINT_MONTH procedure under a different name and added chr$(13) at the end of each print line. I believe Bill's problem would be solved by using 0PEN#5,ser1c at line 380. See the Manual Concepts p16. You may also need to adopt a different BAUD rate to suit your printer.

John Tanner, 43 Northumbria Drive, Bristol BS9 4HL. 0272-623401

P.S. I no longer need to apologise for the lack of # signs as although Wildings/Brother took four months to produce it, I now have the AASCI daisy wheel which seems to be 100% compatible with any normal listing requirement.

ADDITIONS TO THE LIBRARY

Here is a description of two programs I have sent to Rob Sherratt although I realise these will be sent on to whoever is now the present Software Librarian.

BOOT.
This program is a well modified version of the original BOOT (Library 1) and contains extra features, among these are: Detecting from a RESET whether in Television or Monitor mode,using the correct size of screen accordingly; Options on whether you wish to use MDV1 OR MDV2 when obtaining a Directory and on the type of load required e.g. MERGE, LRUN etc etc. I found it best to leave Windows #0, #1 & #2 unchanged from reset as many programs do not define their own.

MASTERMIND_BAS.
This should be self explanatory on how to play the game so here are its other features, It only requires one key press at any of the stages, option to change colours are at the end of each group of four, the row nearest to you is row 4,no ENTER key is needed, there are three levels (6, 8, 10 colours), the display mode is 4 however the screen is television size, the board layout is in a kind of 3D type perspective, OH, it makes a few noises as well.

With reference to a suggested cassette interface for the QL, I think it is a good idea, not everyone will be able to afford a Disc based system such as Computermate

Q-Disk from CST for a bare minimum of £300. Micro- drives are OK in many respects but they do look fragile and their reliability over a period of several years has yet to be proven. The cassette tape could be used to make backup copies of programs held on the cartridges thus releasing further cartridges for proper use instead of being CLONES. Even though the price of the cartridges has fallen to a reasonable level of £1.99 I think it is viable to keep a backup set of programs on cassette tape. I have tried this using my SPECTRUM with INTERFACE 1 on the NETWORK & RS232 facilities even with Machine Code to no great success. What is needed is a device that plugs into the SERIAL port and then into the DIN socket on a tape recorder.

In answer to Capt. E.D. Fieldson's letter (vol 1 issue 12), the reason all or nearly all his listings appear in lower case is due to what I can only describe as a Remember Function. I don't know how it exactly works but I presume that the first time you type in a name as a procedure or function or even directly as a command it remembers that form and will repeat it in that exact form when used again. Try this

      Reset the QL, press F1 or F2.
type in directly   SPECtrum (and then press ENTER)
You should get   BAD NAME
Now type directly   10 spectrum   "   "   "   "
Hey Presto the listing shows 10 SPECtrum

Constructive criticism of my programs would be most welcome.

L.A. PRIVETT,
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BARKING,
ESSEX, IG11 9AB.

An Important Accessory for Computers

There is one key accessory which, over the years, is always to be found on my computer table. Not expensive, but totally essential! It is a LENS, a reasonably powerful lens or magnifying glass, capable of discerning clearly a single 'dot' made by a matrix printer, preferably when the print has been reduced in size by two - as is often the case when programmes are reproduced in journals. Thus, when confronted by the line which seems to be:
1120 n = u - 1 + 1   (page 43 QL USER Feb 1985).
there is no worry. A look through the lens shows that the first '1' has a tiny dot horizontally opposite the top. In the text there is reference to L: hence the first '1' is clearly a lower case L. The second '1' is also not too difficult - the single dot to the left of the top of ' 1' is below the top: hence it is '1' - unity. Lower down on this page it seems we have: 1310 1 = 1 : J = u

Again, this can be sorted out - the first '1' has a single mini-dot on both sides of the top, and also at the bottom. Yes, you are right ! - it is a upper case 'I'. The second '1' is now easy - it must be a lower case 'L', and inspection confirms that it is.

But seriously: yes, I fully support Captain Fieldson (Quanta Jan 85, p. 35) in his plea that lower case 'I', 'J', and ' L* should be avoided like the plague in computer programmes. I would add too, lower <u>and</u> upper case '0', which have also appeared lately in a journal as a variable. 'U's and ' V's are alright singly, but both should never

appear in a program, either lower or upper case. Why, why, are programmers so fond of 'i' !! Odd !When listings are reproduced, almost invariably the quality of print will be poorer. And in all the cases I have encountered in programmes recently, there has never been a shortage of good letters to choose - M,N,P,Q,S,T etc etc. I myself quite like to use cc, dd, ee, ff, mm, nn, CC, DD, EE, etc in critical cases to make certain of legibility.

Incidentally, I timed the sorting in this programme in the QL User and compared it to the Bubble Sort and the Insertion (Pascal) Sort (Leon p.30 Quanta 10: p38 Quanta 11).

SORTS	125	250	500	1000	
Partition	19	39	90	192	seconds
Insertion	73	277	1087	4284	"
Bubble	127	460	1617	5921	"

It is interesting that the partition sort increases roughly linearly with the number of numbers sorted, whereas the Bubble time of sort rises more rapidly - nearly the square. As expected, the partition sort is very considerably more efficient.

It is easy to record the time lapse - simply insert lines with T1=DATE and T2=DATE before and after the sort, and then PRINT (T2-T1). The time lapse will be printed out in seconds. It is of course possible to use DATE$, but this takes more trouble:

```
1000 DEFine PROCedure LAPSE
1010 D$=DATE$: HH=D$(13 TO 14): MM=D$(16 to 17): SS=D$(19 to 20):
1020 TT=HH* 3600+MM*60 + SS
1030 END DEFine
```

Put LAPSE: T1=TT at one point in the programme, and LAPSE: T2=TT later.

Bill Cowhig, 21 Priory Road, SALE, Cheshire. M33 2BS 061-973-3604

Faster version of '3-D' (January's Newsletter)

```
1      REMark- - - - - "PLOT 3-D" - - - - -
3      REMark- - - - -  from '3-D PLOT' by Sean Barnard
5      REMark- - - - - QUANTA vol 1,I2, PI4
7      :
9      REMark- - - - - modified PCG 25/1/85
11     REMark- - - - - 2,9 now runs at 19 sec , was 22 sec
13   :
15   :
100 PAPER 0: INK 7: CLS
110 LET a=50:LET b = 80
111 :
120 PRINT "input any two numbers": PRINT: PRINT
130 INPUT "number 1- ? " ; c
140 INPUT "number 2- ? " ; d
150  CLS
151 :
160 POINT b,a
170 FOR x = 0 TO 2*PI STEP PI / 180: POINT b + a*SIN (x) *SIN (x*c) , a + a*C0S (x) *SIN (x*c)
180 BEEP 5000,10
181 :
190 STOP
```

Line 170 is the key.

P Goff,
London.

MANNESMAN TALLY SPRINT PRINTER

I have been using a Mannesman Tally Spirit Printer, otherwise known as the MT-80, for a few weeks with my QL and a Miracle Systems Limited interface and can report that these work very well together. The printer is more handsome than most and its print quality is first class for a standard dot matrix.

Its control codes are generally Epsom compatible, but to be explicit, I suggest the following! - the manual is occasionally ambiguous and does not lead you by the hand.

```
DRIVER NAME          : MT-80
PARITY               : NONE
BAUD RATE            : 9600
LINES/PAGE           : 66
CHARACTERS/LINE      : 80
CONTINUOUS FORMS     : YES
END OF LINE CODE     : < CR >
END OF PAGE CODE : < FF >
PREAMBLE CODE        : < ESC >,@, < ESC >,R,< NUL >
POSTAMBLE CODE       : NONE
EMPHASIZE ON         : < ESC >,E
EMPHASIZE OFF     : < ESC >,F
UNDERLINE ON         : < ESC >,-,  < SOH >
UNDERLINE OFF     : < ESC >,-,  < NUL >
SUBSCRIPT ON         : < ESC >,S, < SOH >
SUBSCRIPT OFF     : < ESC >,T, < ESC >,H
SUPERSCRIPT ON       : < ESC >,S, < NUL >
SUPERSCRIPT OFF      : < ESC >,T, < ESC >,H
TRANSLATE 1          : £,< ESC >, R,< ETX >, # < ESC >,R, < NUL>
TRANSLATE 2          : @, @, < BS >  ,0
```

This assumes that DIP switch SW2-3 is ON so as to give automatic <LF> with <CR>. The setting of the other DIP switches should cause no problems, but it is not safe to assume that they are all set at the factory in the "normal" position as set out in Appendix E to the manual.

The above will allow all characters shown on the keyboard to be used in Quill and will allow correct Printing and Listing in SuperBASIC. Translate2 creates "@" by overprinting with "0"; It is passable. It is , however, a good idea to do something with it as otherwise, if it is accidently used, it will upset the layout as well as not printing because its code is 127, which is < DEL >. A good alternative would be "Q,0,< BEL >".

It is a pity that there are not a few more "translate"s so that one could make use of some of the other printable characters that can be generated by the QL's keyboard. If they would accept thirteen characters, one could produce any sign needed in special circumstances using the printer's graphics mode.

One warning must be given: the printer cannot produce Bold Super- or Sub-script and if you try in Quill, it may be upset and refuse to return properly to the Normal face. This problem may apply to other printers, although no-one seems to have mentioned it.

The only remaining problem is Easel. As stated by Ken Huber on page 33 of Issue 11, it generates its own <LF>s. The solution is to patch Easel using three of Tony Tebby's commands on the Library Cartridge 1. However, I could not get these to work using the procedure as described by Ken Huber, but using the following short program, I was successful. If you quail at patching the back-up, Just do your working copy. Load the commands, put Easel in mdv1, and then write this:

```
100 OPEN#3,mdvi_gprint_prt
110 SET_POS#3,200: BGET#3 , a : PRINT a
120 STOP
130 SET_POS#3,200: BPUT#3,0
140 CLOSE#3
```

Run it, and it should print "10" and stop. If it does not, break into it and check the program. If it does, type "CONTINUE   < ENTER >". Then type "DLINE 120 TO 130 < ENTER > RUN < ENTER >". This time it should print ,"0". Your patched Easel can now be used normally.

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LIBRARY CARTRIDGE 1

On receiving the copies of three of the library cartridges I decided to make a printed listing of each of the BASIC programs. I should point out that I have to pay for any continuous stationery but I can obtain any amount of A4 sheets, used on one side,- free! I therefore changed the library program " list bas" so that it: can be used with single sheets as follows. I also corrected the error which omits a line if the page length is exceeded. Lines 2355 to 2365 have been modified to provide a numerical index of the listings.

```
2130      IF nt = 2 THEN
2131          PRINT#5, line$
2132          PRINT#2, line$
2133      END IF
2134      IF nt  >0 THEN
2135          PRINT#5,Form$:PAUSE
2136          new_title: nt = 0
2137        ELSE………………. (as before)

2180      IF lines > pagelength THEN nt = 2

2350      PRINT #5,Enlarged$ & Bold & Untype$;
2355      k = r - 2: q$ = k: L = LEN (q$)
2360      PRINT #5,fname$(0);
2365      PRINT #5;TO (12-L); k; "  ";fname$(r);"  page"; page\\\
```

Here are the modifications required to make "list_bas" print out   as an index. There is a "no" option.

```
2102      ans = 1
2104      IF fname$ (r)="dir_lst": index
2106      IF ans=0: GO TO 2220
2480 :
2490 DEFine PROCedure index
2500 CLS#0: PRINT#0; "If you do not wish to make this listing into an index then enter 'n'
"
2510 IF INKEY$ (-1)= " n " : RETurn
2520 ans=0: c=0
2530 new_title: k = 5: cont = 0
2540 PRINT#5; "  "
```

```
2550 INPUT#4, line$: PRINT#2; line$
2560 INPUT#4, line$: PRINT#2; line$
2570 REPeat list_index
2580    INPUT#4,line$
2590    q$ = c: L = LEN(q$)
2600    IF nt=1
2610        PRINT#5; TO(k-L); c; "2sp"; line$
2620        PRINT#2;TO (k-L); c; "2sp"; line$
2630        PRINT#5;Form$
2640        IF cont: c = c +1: EXIT list_index
2650    `    CLS#0: PRINT#0; "Replace same sheet of paper at same start
settinq"\"and press any key when ready"
2660        PAUSE
2670        lines = 5: k=k+30: nt = 0: c = c + 1
2680        PRINT#5; \\\\
2690      ELSE
2700        PRINT#5; TO (k-L); c; "2sp" ;line$
2710        PRINT#2; TO (k-L); c; "2sp" ;line$
2720        lines=lines + 1: c = c+1
2730        IF lines>pagelength: nt = 1
2740        IF k>64: cont = 1
2750    END IF
2760    IF EOF(#4): EXIT list_index
2770 END REPeat list_index
2780 IF cont: PRINT#5; GOTO 2530
2790 CLOSE#4
2800 PRINT#5;Form$
2810 PAUSE
2820 END DEFine index
```

If you intend to use continuous stationery omit line 2630 and reword line 2650

PROCEDURE TITLES

There is one advantage of using lower case for procedure titles and variables which is that if you accidentally choose a keyword it will immediately show up by changing to upper case When the line is entered. Since the error is then obvious I think this outweighs any considerations of neatness. If upper case had been used the error might not be found until the program is run.

Brian C. Bird,
82 Hillview Road,
PETERCULTER,
ABERDEEN,
AB1 OUB.

256k RAM BOARD FROM SIMPLEX DATA LIMITED

A real word-processor for the QL at less than £200. That's one of the advantages of one of the first QL add-ons to appear. With a little imagination, you ought to be able to think of several other applications.

For anyone used to Sinclair delivery dates, the service from Simplex Data is disconcertingly quick. Even allowing for a defective board which had to be returned, I had a working version within a week of my order.

Physically, the board is unremarkable, a row of eight 256k chips, and a few odds and ends. The construction is not as robust as the 68K/0S board from GST, but seems perfectly serviceable. It fits easily into the port at the left of the machine. Once this is done, you have a 384k QL.

At first, I tried the obvious tests. "DIM A(230,230)" was accepted without demur. I still wonder why anyone might want to use such a statement! Note that A(50000) will not work, the maximum value for a dimension is 32k. String arrays of size 350000 are now allowed (though, again, why would you want to?). Machine programs of a similar length are possible.

If you have tried manipulating data on this scale, you will realise that large data structures are not a good reason for buying the memory board.

Why else?

Quite simply, QUILL and its relatives are transformed by the presence of additional memory. With the board in place, the QL with QUILL is, in my opinion, the equal of many much more expensive systems. The delays waiting for overlays are gone. Realignment of text is rapid. Even HELP is quickly available. Although I have less experience with the other packages, a few experiments suggest that the transformations are equally remarkable.

The effect on other (non-Sinclair) packages is less dramatic. I found that METACOMCO's ASSEMBLER/EDITOR takes advantage of the extra memory. The editor and assembler can coexist, with profit to the less than perfect writer whose corrections can be done more rapidly. Of course, larger files can be handled too. COMPUTER ONE's PASCAL did not appear to take advantage of the memory. Program development is no faster, at each stage the editor and compiler have to be loaded. There does appear to be more room for programs and data.

Overall, I am very pleased with this product. I bought the QL largely as a computer which was a word-processor. With the addition of this board, I have just that.
[256k RAM board: £198 from SIMPLEX DATA LTD, 432 Greenford Rd, Greenford, Middlesex, UB6 8SG. (01-575-7531)]

Wilson Stothers

COMPUTER ONE FORTH

I received a copy of FORTH from COMPUTER ONE at the end of November 1984.

I returned the cartridge and manual within a week.

All of the elementary commands worked as listed, but much of the non-standard material promised in the manual was missing.

The advertisements suggested multitasking. The manual offered only the ability to run a 'background' task (using no Input/output). In practice, not even this was available. None of the multitasking words was implemented.

There were some problems with the 'double-precision' arithmetic. It was usable, but required care.

The PRINTER word was not implemented. This was, to me, quite serious. Without the ability to print out the results, a language is very restricted.

The answer seemed to be to write a 'word' in assembler. After all, the package offers an assembler (written in FORTH, hence the syntax). Just try! The assembler has many bugs of its own!

This package seems to have many sins of omission. If you must have FORTH on your QL, perhaps you should wait.

[QL FORTH COMPUTER ONE LTD. Science Park, Milton Rd, Cambridge CB4 4BH.]

Wilson Stothers

Postscript to Ackermann Function (QUANTA 11 page 10)

The conversion from binary to decimal (BINDEC) shown in full in this programme can of course be replaced by two lines using the vector UT.MINT provided in QDOS. This is perhaps the simplest of the arithmetical subroutines provided, and this is reasonable because it will probably be the one most frequently used in different kinds of programmes.

On the bottom left hand of page 12, immobilise MOVE.L D1,D0 and BSR BINDEC (or of course delete them). Then insert in their place:

```
                    MOVEA.W $CE,A2
                    JSR (A2)
```

$CE is the vector for UT.MINT (e.g. see Dickens 'QL Advanced User Guide' page 207). It should be added that a channel had already been opened in my programme - and this is essential for it to operate. You will need a carriage return to tidy up the screen, so follow this by:

```
            MOVE.L #10,D1
            QDOS IO__BYTE, 3
```

Self-locating QL Programs. Where do they settle ??

The QL of course loves self locating programs ….. 'position independent code' ….. 'programs which can be loaded anywhere in memory', when it is possible for several programs to be resident in memory at the same time, and all of them in operation, this important facility is essential. But it leads to complications….

We are told that A6 points to the base of the code, and that (A6,A4.L) points to the base of the DATA area, and that (A6,A5.L) points to the end of the DATA area. In the case of the Metacomco assembler, it says that a default of 500 bytes is given to the DATA area, but any desired span of memory can be allocated to DATA by using SIZE. What does all this mean ?

It occurred to me that the simple way to answer this is to print out all these registers in a chosen programme. (A self-locating MONITOR would do this, but I do not have one.) I used the UT.MINT vector to do the printing out, and loaded all the registers into D1 in turn, including A7 which is the SP, and MS5 which happens to be very near the end of my programme. The result was:

A4	A5	A6	A7	MS5 (END)
304	804	-808	-4	-508

The length of the programme was 304 bytes and is given by A4. The beginning of the programme is at -808 (i.e. A6), and the end of the programme is at -508 (give and take a few bytes). A6+A5 is nearly zero, and this is the end of the Data area. A6+A4 is nearly -500 :i.e., located at the end of the programme and in magnitude the length of the Data area. Thus we have the picture of zero: 500 bytes below zero the end of the programme: 800 bytes below zero the beginning of the programme. The stack pointer is at 'zero' and loads downwards from there. Data can be loaded anywhere into this 500 bytes starting from the end of the programme (-500) and moving upwards (but not so large as to conflict with the downwards descending stack!).

Where then in real terms is 'zero' ?? One might guess where it is, but just to make certain, I set the stack pointer SP to a given known address. (MOVE.L #$3FA000,SP was my choice). The programme then printed out -1536 for SP (A7), and by a little calculation, it was easy to show that 'zero' was in fact $40000 - where one would expect it to be!

Another test involved running the clock using the QUANTA library programme, and then loading my test programme. The results I got were:

A4	A5	A6	A7	MS5 (END)
304	804	-2712	-1908	-2412

Thus, my programme was pushed down below $40000 by a further 1900 bytes, and this must be what is occupied by the clock programme. Juggling with the SIZE parameter also showed how the location of the programme could be shifted up and down to give more or less space to Data. The main value of all this was that it was possible to obtain a much more tangible impression of what was happening.

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QL SUPERBASIC by A.A.BERK   GRANADA PUBLISHING £6.95

This book is aimed at the person who has had no previous experience with programming any Home Computer in BASIC - there is a -first time for all of us! Essentially it is a much-needed beginners guide to the Beginners Guide in the Manual. Many more experienced people would find some aspects of the QL USER GUIDE clarified for them.

It begins with an introduction to general programming concepts stressing the importance of flow-charting a program before starting to type it in. Then follows descriptions of SBASIC input/output, loops and decisions, strings and arrays and simple arithmetic and standard functions. I found the description of the use of the NEXT and EXIT keywords in loops particularly clear compared to that in the USER GUIDE.

The book seems to be at about the right pace for the complete Beginner. All Keywords are illustrated by short examples and those that I typed in worked! Many beginners must have found the numerous errors in the USER GUIDE very disheartening.

I would certainly recommend this book in preference to the Beginners Guide in the QL Manual.

CRASHING QUILLS by FRANCIS CAMERON

So I'm not the only one who goes off to bed in despair when several hours' work disintegrates in a multi-coloured display of pyrotechnics as Quill decides it's had enough for one day and makes it clear it's not going to go on any longer!

Bitter experience, though, has taught me that there are certain precautions that can be taken to mitigate these disasters.

Firsts recognise that QUILL always works with excruciating slowness - and it doesn't like to be hustled. Motto: never try to hurry it along. If the Microdrive wants to go for a spin, let it! Wait until it has stopped before you take your next step. I find this is always prudent. It's especially important to wait whenever you initiate a series of commands with F3. Always wait for the Microdrive to stop (and for the screen display to complete its response) before going on from one step to the next.

Second: SAVE often - but avoid the "overwrite" facility like the plague. Quite often it works as it should. At other times it takes violent objection to holding 1200 words of beautifully polished intellectual prose, and you end up with nothing but a transitory screen display. Use a spare cartridge with Quill, and SAVE with a series of different names ("a", "b","c" makes good sense). When you get to the end of the process, use the BACKUP procedure to make your final copy; then format the spare tape to have it ready for next time.

Third: treat the "new Page' facility with extreme caution. Always save before you try to implement your own page ending - and change over your mdv2 cartridge if you possibly can. (Quill versions vary on this.) Even then be prepared to find your text disappear if you make a further alteration to that particular page length. Deleting individual lines after you have forced a page-ending seems to be too confusing for Quill and it objects.

Fourth: if you need to move through more than half a page or so, use GOTO rather than the up and down cursor controls; and if you have to delete more than two lines, use ERASE rather than the Ctrl and arrows. At the time, this may involve what seems tc be a small segment of eternity; but even that is shorter than recovering your calm and beginning your text all over again.

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MUSIC (?) ON THE QL.

The sound -facilities on the QL are limited to say the least. The quality of the sound from the fitted speaker (?) is very poor, being just a 'buzz' whose pitch and appalling quality can be altered.

The noise required is generated by sending a 'Beep' command from Basic. This has eight parameters:- duration, pitch, pitch_2, grad_x, grad_y, wrap, fuzzy and random.

The duration and pitch are self-explanatory; pitch_2, grad_x and grad_y create a warbling effect by producing a secondary pitch so that the sound will bounce between these two pitches at a rate of grad_x with a gradient of grad_y. Wrap is a feature which causes the note to bounce around a bit when either of the two pitches is reached. Fuzz distorts the quality even more and random creates a random change in the grad_y gradient factor.

For the duration, 4000 best simulates a Quaver, 8000 a Crotchet and 16000 a Minim. Pitch, however, is not so easy. The values needed follow a very non-linear scale and experimentation was need to find the best values. The following values give a good approximation for a two Octave range:

124	C (low)	57	C (Concert C)
116	C#/Db	54	C#/Db
108	D	50	D
102	D#/Eb	47	D#/Eb
96	E	44	E
91	F	41	F
86	F#/Gb	38	F#/Gb
81	G	35	G
76	G#/Ab	32	G#/Ab
71	A	30	A
66	A#/Bb	28	A#/Bb
61	B	26	B
57	C (Concert C)	24	C (High)

Notice how the lower notes have a greater difference of values to the higher ones. For grad_x, 0 seems to give better effects with negative values of grad_y. Mid-values for wrap appear to give pleasing sounds as well. There are $2.814749767 \times 10^{14}$ possible sounds (note more than 8 sig. figs. - I used a calculator!), so experimentation should give some good noises.

The enclosed program listing gives a fairly bad rendition of "When the saints go marching in". To produce a tune it is not enough to just send 'Beep's' to the sound chip. Because of the design, the QL's 68008 encounters the command, sends the data to the sound chip and ploughs on through the program. If the beep statements are immediately after each other, the sound chip will receive a stream of noises to produce and will get some whilst it's still making a noise and so it will ignore them, not much fun for making a song!

The trick, I have found, is to insert a Pause immediately after each Beep command causing the 68008 to wait until the sound chip has finished before giving it

another noise to make. This works surprisingly well and has the added bonus of complete control over the time between each note.

In my program, the duration, pitch and Pause length are held in a DATA statement and Read out by a loop whose length is determined by the first value in the Data statement, the values are then used to make the notes.

```
100 REMark Program To Play 'The Saints'
110 REMark Ken Huber 12/1/85
120 REMark
130 MODE 512
140 WINDOW #0,512,256,0,0
150 CLS #0
160 WINDOW #2,454,184,32,10
170 WINDOW #1,454,184,32,10
180 WINDOW #0,454,50,32,200
190 PAPER #2,0: INK #2,7
200 PAPER #1,2: INK #1,7
210 PAPER #0,0: INK #0,7
220 BORDER #0,1,2
230 CSIZE #2,0,0
240 CSIZE #1,2,0
250 CSIZE #0,0,0
260 CLS#1: CLS#2: CLS#0
270 PRINT#1,'Hit Any Key To Start Tune...'
280 a$=INKEY$:IF a$='' THEN GOTO 280:END IF
290 RESTORE
300 READ a
310 FOR z = 1 TO a
320 READ c,d,e
330 BEEP c,d
340 PAUSE e
350 END FOR z
360 DATA 32,4000,56,12,4000,44,12,4000,41,12,16000,35,60
370 DATA 4000,56,12,4000,44,12,4000,41,12,16000,35,60
380 DATA 4000,56,12,4000,44,12,4000,41,12,10000,35,24
390 DATA 10000,44,24,10000,56,24,10000,44,24,18000,50,60
400 DATA 4000,44,10,4000,44,10,4000,50,10,10000,57,40,4000,57,12
410 DATA 8000,44,22,8000,35,22,4000,35,12,16000,41,60
420 DATA 4000,44,10,4000,41,10,8000,35,22,8000,44,22,8000,57,22
430 DATA 8000,50,22,20000,57,60
440 PRINT
450 PRINT 'Good huh!'
460 STOP
```

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PS. The program was loaded by attaching '_exp' to the Basic Save File name and then Importing the File into Quill.

SHINWA/MICRO-P CPA-80s SETTINGS

I have recently bought the new SHINWA/MICRO-P CPA-80 with serial interface. With some help from the dealers , I finally succeeded in installing the above printer. Here are the following dip switch settings & control codes for the PSION packages.

DIP SWITCH SETTINGS

SW1   OFF
SW2   ON
SW3   OFF
SW4   OFF

These four switches set the Baud rate to 4800 (maximum)

SW5   ON   2 stop bits
SW6   ON   parity bit selection (can be ignored)
SW7   OFF   No parity check
SW8   ON   8 bit word length

(N.B. SW7 is the only switch that needs to be changed from the initial settings set in the factory.)

CONTROL CODES

DRIVER NAME	: CPA-80
PARITY	: NONE
BAUD RATE	: 4800
LINES/PAGE	: 66
CHARACTERS/LINE	: 80
CONTINUOUS FORMS	: YES
END OF LINE CODE	: <CR>,<LF>
END OF PAGE CODE	: <FF>
PREAMBLE CODE	: <ESC> , @
POSTAMBLE CODE	: NONE
EMPHASIZE ON	: <ESC> , E
EMPHASIZE OFF	: <ESC> , F
UNDERLINE ON	: <ESC> , - , 1
UNDERLINE OFF	: <ESC> , - , 0
SUBSCRIPT ON	: <ESC> , S , 1
SUBSCRIPT OFF	: <ESC> , T
SUPERSCRIPT ON	: <ESC> , S , 0
SUPERSCRIPT OFF	: <ESC> , T
TRANSLATE1	: £ , #
TRANSLATE2	: NONE

The EASEL package screen-dump works satisfactorily with the CPA-80s.

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PROCEDURE INDEX

The business program I am dealing with at present has more than 1500 lines and at least 44 procedures so it is a little difficult to keep track of the position of all the procedure and function definitions.

Using subroutines it is easy to locate the routines because of course they are indexed with a line number. But this is not the case when using procedures. REMark statements can be appended to the lines containing the procedure calls giving the appropriate line numbers but if the program is renumbered these references do not get changed and they have to be corrected manually.

However if the program contains a separate list of the procedures using GOTO (or GOSUB) this index will be automatically updated when the program is renumbered.

Here is an example:

```
20000 DEFine PROCedure index
20010 CLS: AT 10,10:PRINT "PROCEDURE INDEX"
20020 sta = 21000:fin = 21100
20030 REPeat lis
20040 LIST sta to fin
20050 sta = fin + l:fin = fin+100
20060 PRINT #0;"Press 'ENTER' to continue"
20070 a$=INKEY$(-1)
20080 IF a$<>CHR$(10):EXIT lis
20090 CLS #0
20100 END REPeat lis
20110 END DEFine index
20120 GO TO 22010
21000 enter :GOTO 250
21010 fsave :GOTO 625
21020 index :GOTO 20000
21030 initial :GOTO 100
21040 lprint :GOTO 530
21050 move  :GOTO 450
21060……..etc to 22000
```

The index can be in alphabetical order since it should never be called by the program.

To list the index enter 'index' as a direct command. I prefer this 'stepped' method of listing to stopping with CTRL+SPACE.

Line 20040 can be modified if you wish to send the list to a printer.

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INSIDE THE QL

I have recently thrown all caution to the wind and opened up a QL to have a look around inside. The PCB has not changed much since the picture in the advertising leaflet, although it is now stamped 'QL' instead of 'ZX83'. There are a couple of patches on the circuit board - a transistor leg has been severed and a resistor added and two pins on the Microdrive chip have been soldered together through another resistor.

The keyboard unit is an amazing work of art. Many people do not realise that what they are actually pressing on is a pad not unlike the ZX81 membrane. A plastic 'bubble' is placed on the membrane and a spike under each key presses down the 'bubble' and operates the membrane.

There are many products on the market which enable computer users to clean the heads of their cassette and disk drives, but no one, not even Sinclair, has suggested that QL owners should clean the read/write heads of the Microdrives. It is possible to insert a small cotton bud into the slot to clean the heads, but if you do this DO NOT PRESS TOO HARD as the head is only held in place by a small piece of metal. It is probably wise to shine a torch into the slot so that you can see where the head is positioned.

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CALLS from SUPERBASIC

In the QL Manual, there is a very brief reference on page 6 of KEYWORDS to the facility of making a CALL to a machine code program from BASIC. No less than 13 parameters can be passed on to the program through the 13 registers. This is a very powerful command, which I tried out on one of my programs (for brevity, I will call the machine code program 'MAC" and the BASIC one *BAS'). Does one have to do anything special in the machine code program? No, in my case, after writing in MAC 'ORG START', I simply put the parameter in DI straight away into a store (MOVE.W DI,FLN), from which I retrieved it as and when required later in the program. I had inserted in my BASIC program (BAS) 'CALL 200000,FLEN', which meant sending a parameter FLEN (about #300) to DI. But, alas, when I ran the BASIC program, there was a 'freeze up' and it would not return to BASIC.

It was not difficult to insert 'print-outs' at various points in my program (I had no MONITOR or BE-BUGGER), and it was possible to check that the parameter in DI had arrived from BAS and that MAC was behaving properly and correctly right up to the FINISH routine. I explored every possible cause of the trouble - my main thought was that my program was crashing with some other program - with BASIC itself. But shifting the address widely several times was no cure. Finally, I examined 'FINISH' (see the Ackermann function program) and the comment in METACOMCO's manual that 'MOVEQ #0,D0' set all to right after a CALL had been made from Basic. It occurred to me to change this to 'MOVE.W #0,DO', since words rather than bytes were being transferred. At last, my program did return to BASIC, but it was a corrupted BASIC and did strange things. Then I made it 'MOVE.L #C,D0'. This was the final answer, and now all worked perfectly. Somewhat later, I found a reference to this in Tony Tabby's manual on QD03. 'DO must be returned as an error code (long).' (Appendix page 6)

He also gives a number of other warnings: in particular that A6 should not be used, and A7 (SP) only with caution.

Incidentally, the Metacomco Editor is very speedy and versatile, and I find it helpful to copy lengthy and repetitive BASIC programs in this Editor as a preliminary. It is interesting to see that when this is later loaded into BASIC, lines which have mistakes in them have the word 'MISTAKE' written into the beginning of the line!

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REVIEW OF SIMPLEX DATA RAM EXPANSION

Several Members who have purchased this unit have written in with comments, so I was very pleased when Simplex sent me one of their 256K modules for review.

As one or two members have said, it is a very compact unit, and is hardly visible when plugged into the expansion port on the left of the machine. It comes with a single sheet of instructions, which unfortunately doesn't tell you to actually plug the thing in - it jumps straight from "Remove expansion port cover..." To ""Switch on your QL..."! This apart, the instructions tell you everything you need to know.

The unit appears to be well-designed, in that it uses Texas Instruments 256K RAMs, with the TI TMS4500 RAM controller chip, which refreshes the RAMs (reads them periodically, to prevent them from loosing their contents). This approach enables the chip count to be kept right down to the bare minimum, increasing reliability and reducing power consumption. The 256K version uses eight RAMs in sockets, with eight vacant positions for the additional RAMs to give 512K. No sockets are provided for the additional RAMs, but it would be quite easy to add them.

Software running in the expansion RAM should run about three times faster than in the internal RAM. since the latter is effectively slowed down by the need to refresh the display.

The standard of construction was quite adequate, except that the board had a few "bodges" on it, with pins from one chip directly wired to some pins on another one, and a couple of resistors mounted vertically, with a wire going from them down to the board. I consider this excusable, as Sinclair have charged the spec. of the expansion port a couple of times, and manufacturers like Simplex have to do this sort of thing to be able to ship units quickly, without having to redesign the board.

With the board in position, you switch the machine on, and the machine takes noticeably longer than usual to initialise, due to the extra RAM that has to be tested as part of the reset sequence.

As other members have found, Quill and Archive run noticeably faster with the RAM expansion, and Microdrive operation seems to be speeded up, probably because QDOS uses some of the extra RAM for additional buffer space. Archive will also handle a lot more records with the additional RAM.

I tried the latest version of the Computer One editor/assembler pack see and this seemed to utilise the extra memory, in that the editor did not complain when I told it to reserve 300 K of workspace! I didn't have a file that big of course. Adder's editor/assembler told me I had 295984 bytes available. Metacomco's LISP also used the additional memory, giving a heap size of 308248 bytes. Using Metacomco's BCPL development package I was able to edit a large file, and compile another program, at the same time, without any problems. This was quite a good test of the usefulness of the additional RAM, as the BCPL compiler takes a lot of memory.

Apart from its advantages with existing software, the availability of large amounts of RAM means that it is now possible to put full implementations of Cambridge LISP or PROLOG on the QL, making it an excellent system for AI use. Large expert systems would be quite feasible, for instance. The QL would not be an ideal tool for developing such systems, but it would make an extremely low cost machine for the end user of an expert system.

At a price of £198 for the 256 K version, and £396 for the 512 K version, I consider this memory expansion board to be good value for money, since it is the only one you can get at present. It has the disadvantage that you cannot put anything else such as a disk interface into the expansion port when the memory expansion is present, but Simplex Data tell me that they are thinking of producing a buffered mother board unit which will solve this problem. As one member has mentioned, it would probably be best to buy the 256 K version at present, and upgrade to the full 512 K when the 256 K RAMs come down in price.

Leon Heller

HAVE YOU GOT A SCREW LOOSE?

It would be wise to check your mains plugs from time to time, and make sure that all the wires inside the plugs are secure. I recently experienced a lot of problems with my system, which I put down to mains interference, until I kicked the four-way mains adaptor I use, and saw a lot of flashes on the screen. The neutral lead in one of the plugs was loose, and tightening it up cured the problem. You are mostly likely to have this sort of trouble if, as I often do, you carry your system around in your car, as the vibration tends to loosen things.

Leon Heller

BEGINNERS' SECTION

COMMENT ON SEAN BARNARD'S 3-D PLOT (ISSUE 12 PAGE 14)

Sean Barnard's 3-D plot program in Issue 12 is a useful program to illustrate some of the functions of the QL (and other micros).The program can easily be modified to amuse and instruct children of all ages by permutating the following varistions:-

(1) Line 30 - add STEP .1 (or some other fractions) to the end of the line
(2) Line 30 - change the 360 to 180
(3) Lines 40-45 - Substitute SIN for COS and vice-versa, all or in part
(4) Lines 40-45 - Substitute TAN in place of one or two of the SINs and COSs
(5) Use negative as well as positive numbers

(6) Line 50 alter the scale of the designs by altering a and b. i.e. LET X2 = 80 + 1.2*a lengthens the design, a n d LET y = 50 +0.5*b narrows it.

Apart from producing a vast number of different designs, some pleasing, some less so, relating the result to the program that produced it can be informative and confidence-building to newcomers feeling their way to understanding micros.

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A VISIT TO CAMBERLEY

I recently spent a morning at Sinclair's Camberley (and Frimley) establishments. My visit had two purposes. Firstly, to have a look round and see what goes on at what, to most users, is their only point of contact with Sinclair Research. Secondly, to attempt to resolve certain differences I have had with Sinclair over the upgrades to the Psion packages.

The first thing I should mention is that Camberley and Frimley (they are about ten minutes drive apart) are in reality nothing to do with Sinclair, but are run by a French-based multi-national corporation called GSI. GSI is a very large company compared to Sinclair, in terms of both size and turnover, I was told.

Frimley is the main site, and contains a large BASF mainframe Computer, which, apart from handling all aspects of Sinclair sales, is also used on behalf of other clients such as garages. They handle all the accounts of all the Renault dealers in the country, for instance. About 120 GSI staff work on Sinclair-related business, but this varies according to what Sinclair are doing. For instance, if a new machine like the QL is launched, temporary staff are drafted in from agencies in the surrounding area. Most of these temporary staff will have previously worked for GSI, and will therefore be fully trained. Many GSI staff do not work exclusively on Sinclair-related activities, for instance, the data prep. staff divide their time between work for Sinclair and other work, such as for the car dealers.

I suppose members will be most interested in the customer support activity. There is a total of about 30 staff devoted to customer support on both the Spectrum and QL. Telephone enquiries are dealt with by one Group, and written enquiries by another. Since they are handling several thousand enquiries a week,it is inevitable that mistakes happen occasionally, but Sinclair, to give them their due, have more people working on customer support than most other computer manufacturers, even those producing much more expensive machines. Several members have complained that they appear to get a standard letter in response to a query, but this is inevitable considering the workload. The staff handling written queries call up standard paragraphs on a word processor whenever possible, but the more esoteric questions do get a personal answer. Of course, when members write to me with complaints about the response to queries, something has gone wrong, but looked at in percentage terms, it appears to be negligible. One problem I forgot to mention while I was there was the small number of members who return machines for repair, and then find that the repair does not appear to have been done. No machines are actually repaired at Camberley; they are all returned to the manufacturer. I shall be taking this matter up with Sinclair.

All customer details are held on the mainframe, both for processing orders, and for the maintenance of an enormous data base which can be used for very selective mailshots. This explains why I got a glossy brochure and invitation to buy a C5 ' trike' whereas many other members did not. I was not specially favoured; I think it was something to do with me living in Milton Keynes.

Another interesting area was the warehouse. This was surprisingly small, because products coming in from the manufacturers are packed and shipped out again to the distributors very quickly. Most members probably know that Sinclair manufacture nothing themselves, everything is sub-contracted. QL consoles, for instance, come from one manufacturer, the power supplies, leads, manuals and Microdrive cartridges come from other suppliers. They are packed at the warehouse, and then shipped out. Each batch received is checked, using sampling techniques. If a certain percentage is found to be faulty, the entire batch is rejected.

Summing up, I must say that I was quite impressed with what I saw. For what are essentially very low-cost machines (the QL and Spectrum), Sinclair are making a real effort in terms of customer support (I don't think Acorn have anything like it), and the entire operation appears to be extremely efficient. I was told that similar visits to other places such as Cambridge, Psion and Thorn-EMI (where the QL is manufactured) could be arranged, and I visited Psion a couple of days ago. I'll report on that in the next issue. I would like to thank Nigel Brown of Sinclair for arranging the visit.

Leon Heller

ARCHIVE (1.01 ADB version)

If you have not tried Archive, let me recommend that you have a look at this piece of software which I have found intriguing. It comes including a demonstration file called GAZET_dbf. If you have trouble with GAZET, stop pressing keys frantically, and look at the prompts with care. If you still seem to be getting random results you may have used SELECT which effectively reduces the file only to those records which satisfied the SELECT demand. RESET (typed in, not the RESET button) will ensure that the whole file is made available to you once again. My one criticism of this demonstration file is that it implies that Archive is a plain filing system and does not hint at its full potential, so press on now and start writing your own file.

CREATEion of a file is straightforward from the handbook and is fine if you know what you want. If you are fumbling your way through new ground you will probably create a file and, as soon as you start to use it, find that you have picked the wrong names for your fields or need some additional ones. If you use EDIT you can write a procedure:-

    proc file
    create "filename"
     .

then add each field name, entering in turn and finishing with endcreate.

 (Note that you will have to add the inverted commas around the file name if you use this technique).

 Use ESC twice to get out of the EDIT mode and then type in the name of this procedure - file - and the creation is done. The advantage of this method is that you can view the whole before committing yourself and, as long as you remember to SAVE the procedure, when you find you got it all wrong, you can delete the old file, amend the procedure using EDIT and create the new, improved Mark II version.

 This may seem a sledgehammer to crack a nut but I have been using records of thirty fields and it is all too easy to make an error and not detect it until after the file has been created. I have also been using data fed into some of these fields to provide numerical answers. Suppose you have three fields, A, B, and C. You can use INSERT to enter the value of the first two and then write a procedure (perhaps called calc) to let C = A + B but you will have to include UPDATE in the procedure to ensure that the value of C is recorded and SPRINT if you want visual proof that the procedure has done its Job.

The use of SEDIT to draw up your own screen display looks complicated, but use the handbook and run through it a couple of times and all will fall into place, and you will then find that you can fit far more information onto the screen, and in a much more legible format. But do remember that it is all to easy to lose all that work quickly, so use SSAVE "scname". Use of CLS or DISPLAY will banish it and you will then have to reload it with SLOAD "scname". But why not another new procedure? (You will need EDIT - F3 - N for this and subsequent additional procedures):-

```
 Proc  S
 Sload
"Scname"
 endproc
```
which will give you single key loading with S.

 Before you forget what you have done, try another procedure:-

```
proc M
Cls:print "Menu"
print
Print "S Loads a special screen layout"
Print "calc Adds A to B to give C"
```

 If you want a cumulative results from all the records try

```
proc calcall
cls: let x = 0:first
while not eof()
let x = x + c
next
endwhile
print at 6, 20; " Cumulative value of C is ";x
```

 I call the procedure on which I am working 'A' while I pound it into shape (or refine and hone depending on your skill) as it can easily be given a more descriptive name when completed. The advantage of the first letter of the alphabet during the early stages of writing a complicated procedure will be obvious as soon as you have a number of them. There is no guide in the handbook to the Archive vocabulary. I have used WHILE

and ENDWHILE so often that I keep trying to use it in SuperBASIC. DIM does not seem to be there nor are Logs to the base 10 but Natural Logs are available. TAB is there whilst it is not in SuperBASIC.

This is only a quick glance at a few points in Archive but I hope it may encourage someone who has not yet experimented to have a look at it. Meanwhile I am devouring every morsel from the experts such as M. F. Jackson (Vol 1 issue 11 pace 24). Has anyone found out how to deal with fields of greater length than the screen width?

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ARCHIVE NOTES

Chas Dillon, who has been doing a lot of work with Archive, has written about 100 pages of notes for members who would like to get the best from this powerful piece of software, The group will be publishing these shortly, and they should be available in a couple of weeks from Brian. I don't know the price yet as we haven't given them to our printer for a Quotation. Chas is doing a session on Archive at the Swindon workshop, and we hope to be able to have copies available for sale at the meeting.

Leon Heller

"BASIC PROGRAMMING ON THE QL" BY NEIL AND PAT CRYER

The QL. has probably had more crummy books written about it than any other machine, so it came as a pleasant surprise to find that here was one book on SuperBASIC that I actually enjoyed reading!

Some idea of the topics covered can be gained by the following list of chapter headings:-

Introduction
Starting programming
Saving, retrieving and joining programs
QL. SuperBASIC
Putting data into programs
Repetition
Making decisions
Adding sound
Windows and channels
Beginning Graphics
Introducing colour
Handling tables
Functions
Handling strings
Handling files
Structured programming
A Games program for the QL.

The book assumes that the reader knows nothing about programming and is therefore eminently suitable for beginners. Experienced programmers might find it useful, also, since it has a reasonable index, and it is much easier to find things in it than in the Sinclair documentation.

The book is very well written, with plenty of examples, with the important points emphasised using a novel (to me, at any rate),technique. The standard of programming in the many examples is very high (using structured programming techniques), and the programs are very well laid out, with indentation to indicate program structure, and plenty of meaningful variable names. I only noticed one thing wrong, and that was the omission of the fact that string function names should have a "$" at the end. This is used in one of the examples, but not mentioned explicitly. At any rate, I couldn't find it anywhere.

Each chapter contains "points to ponder"* such as "can you define a function which would return the cube of a number?". The solutions are given at the end of the chapter. Longer exercises for the reader are given, called "Activities", and solutions to those is also given.

The last chapter contains a interesting-looking strategy game, which appears to have some of the features of Draughts, Go-Moku and Othello, written by Andrew Cryer, which serves to illustrate most of the points discussed in the book.

At £7.95 for 264 pages this book is good value for money, and I recommend it wholeheartedly. It is published by Prentice-Hall International. Neil is a member of IQLUG* by the way!

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NEW LIBRARY ARRANGEMENTS

Allan Bartram has very kindly offered to take Rob Sherratt's place as software librarian. His address is:-

47, Templegate Crescent,
Leeds. LSI5 0EZ.
Tel: (0532) 646464

Sid Day also volunteered his services the same day as Allan. Since Rob was having a lot of trouble keeping up with the new library submissions, Sid has agreed to help Allan by vetting all submissions to the library (checking for bugs and making sure that the programs are properly documented). Could members submitting programs to the library please send them to Sid in the first instance. Sid will then pass them on to Allan for inclusion in the Library and distribution to the sub-librarians. Unfortunately, I am unable to give you Sid's address and telephone number as Brian has all the records with him at college, and this issue has to go to the printer in the next few minutes. Please give Brian a ring if you have something for the library and you require Sid's address. It will be in the next issue.

One reason why Rob had a lot of problems was that members often sent in programs for the library, together with requests for library items. Rob couldn't fulfil the library request until he had logged the program(s) submitted, resulting in a massive backlog. In future, neither Allan or Sid will handle library requests included with submissions for the library. The cartridge will be returned to you and you will have to go to one of the sub-librarians.

Members seem to be having problems with one or two of the sub-librarians, in that they are not dealing with requests as expeditiously as the members would like. If any member has experienced an inordinate delay, they should get in touch with the sub-librarian in the first instance (phoning would be best), and then contact Stan if you still have problems, and he will follow it up. Please bear in mind that the software library is run on a voluntary basis. Rob tells me that one member was quite abusive when told the reason for his library request taking a long time.

A new library list is in preparation, and will be available soon from Brian Pain, price £1.50. We now have about six cartridges of software!

We have had several more members volunteer their services as sub-librarians, and an updated list will be in the next issue. Could any members who have contacted me about addition to the list of sub-librarians please get in touch with Alan Bartram, to make sure you are included in the list.

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INDEXER WANTED.

A member who volunteered to prepare an index for the first volume of QUANTA is now unable to do so, so would anyone else who would like to perform this service to the group please get in touch with me.

Leon Heller.